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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Cristina Gomila

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EXAMINER

ROBERTS, JESSICA M

ART UNIT

PAPER NUMBER

2621

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/541,778	Applicant(s) GOMILA ET AL.	
	Examiner JESSICA ROBERTS	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05/12/2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Acknowledgement of Amendment

Applicant's amendment filed on 05/03/2010 overcomes the following objection(s)/rejection(s):

The rejection of claims 1 and 6 under 35 U.S.C. § 101 has been withdrawn in view of Applicant's amendment.

Response to Arguments

Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4, 6, 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Chien et al., US-5,621,467 (Chien).

Regarding claim 1, Chien teaches in a decoder (fig. 2) a method of concealing spatial errors in a coded image comprised of a stream of macroblocks (see abstract) comprising the steps of: examining each macroblock for pixel data errors (col. 2 line 53-55, col. 2 line 61-67) if such errors exist (fig. 3), then: establishing at least one intra-

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prediction mode (col. 2 line 2-4, fig. 3 element 34) from neighboring blocks (col. 4 line 39-51 and fig. 3), and then deriving estimated pixel data in the block with pixel data errors (col. 9 line 35-38 and fig. 3 element 32) accordance with the at least one established intra prediction mode to correct the pixel data errors (col. 2 line 2-4 and col. 4 line 20-23).

Regarding claim 4, Chien everything as claimed above, see claim 1. In addition, Chien teaches wherein the establishing of at least one intra-prediction mode is limited to information within a rectangular array of blocks center around the block having pixel data errors (col. 3 line 65 -66, col. 4 line 4-16, col. 4 line 39-44).

Regarding claim 6, which is substantially the same as claim 1, in addition to applying at least one interpolation filter corresponding to the at least one derived intra prediction mode to estimate pixel data in the block with pixel data errors to correct the pixel data error in the block. Thus, the rejection and analysis made for claim 1 also applies here for common subject matter. In addition, Chien teaches applying at least one interpolation filter corresponding to the at least one derived intra-prediction mode (fig. 3 element 34 and fig. 5) to estimate pixel data in the block with pixel data errors to correct the pixel data error in the block (fig. 3 element missing block).

Regarding claim 7, see the rejection and analysis made for claim 4.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 2-3, 5, 8, 9-15 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Chien et al, US-5,621,467 (Chien) in view of Richardson et al.,

“H.264/MPEG-4 Part 10: Intra Prediction).

Regarding claim 2, Chien does not explicitly teach to the method according to claim 1 wherein the coded image is coded in accordance with a predetermined coding standard and wherein the intra prediction mode is specified by the predetermined coding standard.

However, Richardson teaches the coded image is coded in accordance with a predetermined coding standard and wherein the intra prediction mode is specified by the predetermined coding standard (Richards teaches a plurality of predicting modes for intra-coded macroblocks in an H.264 CODEC, see I. Introduction).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Richards with Chien in order to minimize the residual between a prediction block and the block to be encoded.

Regarding claim 3, Chien (modified by Richardson) as a whole teaches everything as claimed above, see claim 2. Chien does not explicitly disclose the method according to claim 2 wherein the coded image is coded in accordance with the ISO/ITU H.264 coding standard and wherein the intra prediction mode is specified by the predetermined coding standard.

However, Richardson teaches the coded image is coded in accordance with the ISO/ITU H.264 coding standard and wherein the intra prediction mode is specified by the predetermined coding standard (see 1. Introduction and 2. 4X4 luma prediction modes).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Richards with Chien in order to minimize the residual between a prediction block and the block to be encoded.

6. Regarding claim 5, Chien (modified by Richardson) as a whole teaches everything as claimed above, see claim 3. In addition, Chien teaches wherein the at least one intra prediction mode for the block with pixel data errors is established in accordance with a relative position of intra prediction modes of macroblocks neighboring the macroblock with pixel data errors (col. 2 line 2-4, col. 4 line 39-44 and fig. 3 element)

Regarding claim 8, see the rejection and analysis made for claim 5.

Regarding claim 9, Chien is does not explicitly disclose in regards to the method according to claim 6 wherein an individual macroblocks can be intra-predicted as one of a single partition of 16.times.16 pixels (Intra.sub.--16.times.16 type coding) or as partition of 16 blocks of 4.times.4 pixels (Intra.sub.--4.times.4 type coding).

However, Richardson teaches wherein an individual macroblocks can be intra-predicted as one of a single partition of 16.times.16 pixels (Intra.sub.--16.times.16 type coding) or as partition of 16 blocks of 4.times.4 pixels (Intra.sub.--4.times.4 type coding) (see 1. Introduction, 2. 4x4 luma prediction modes, 3. 16x16 luma prediction mode and fig. 2- 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Richards with Chien in order to minimize the residual between a prediction block and the block to be encoded.

Regarding claim 10, Chien (modified by Richardson) as a whole teaches everything as claimed above, see claim 9. Chien does not explicitly disclose the method according to claim 9 wherein for the Intra.sub.--16.times.16 type coding, the intra prediction modes comprise: (a) Mode 0, vertical prediction; (b) Mode 1, horizontal prediction; (c) Mode 2, DC prediction; and (d) Mode 3, plane prediction.

However, Richardson teaches wherein for the Intra.sub.-- 16.times.16 type coding, the intra prediction modes comprise: (a) Mode 0, vertical prediction; (b) Mode 1, horizontal prediction; (c) Mode 2, DC prediction; and (d) Mode 3, plane prediction (see 9.3.2 Intra Prediction for 16x16 mode for luma).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Richards with Chien in order to minimize the residual between a prediction block and the block to be encoded.

Regarding claim 11, Chien (modified by Richardson) as a whole teaches everything as claimed above, see claim 9. In addition, Chien teaches an interpolation filter to derive a prediction for each pixel within a block (interpolation apparatus, col. 2 line 2-4). Chien does not explicitly disclose the Intra_4X4 coding type, the prediction modes each one having an interpolation filter.

However, Richardson teaches the intra_4x4 coding type, the prediction modes each one having an interpolation filter (see 2. luma 4x4 prediction modes, and fig. 3-3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Richards with Chien in order to minimize the residual between a prediction block and the block to be encoded.

Regarding claim 12, Chien (modified by Richardson) as a whole teaches everything as claimed above, see claim 9. Chien is silent in regards to the method according to claim 9 wherein the prediction modes comprise: (a) Mode 0, vertical

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prediction; (b) Mode 1, horizontal prediction; (c) Mode 2, DC prediction; (d) Mode 3, diagonal down-left prediction; (e) Mode 4, diagonal down-right prediction; (f) Mode 5, vertical right prediction; (g) Mode 6, horizontal down prediction; (h) Mode 7, vertical left prediction; and (i) Mode 8, horizontal up prediction.

However, Richardson teaches wherein the prediction modes comprise (a) Mode 0, vertical prediction; (b) Mode 1, horizontal prediction; (c) Mode 2, DC prediction; (d) Mode 3, diagonal down-left prediction; (e) Mode 4, diagonal down-right prediction; (f) Mode 5, vertical right prediction; (g) Mode 6, horizontal down prediction; (h) Mode 7, vertical left prediction; and (i) Mode 8, horizontal up prediction (see 2. 4X4 luma prediction modes).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Richards with Chien in order to minimize the residual between a prediction block and the block to be encoded.

Regarding claim 13, Chien teaches everything as claimed above, see claim 1. In addition, Chien teaches the method according to claim 1, wherein the direction defined by the intra-prediction mode is sent in the coded stream (col. 5 line 33-50, col. 6 line 4-9 and fig. 4).

Regarding claim 14, Chien (modified by Richardson) as a whole teaches everything as claimed above, see claim 5. In addition, Chien teaches wherein the relative position associated with the intra-prediction mode is the relative position in a spatial direction associated with the direction defined by the intra-prediction modes (col. 5 line 45 to col. 6 line 20, col. 5 line 36-53 and fig. 5).

Chien does not explicitly disclose a spatial direction associated with the direction defined by the intra-prediction modes.

However, Richardson teaches a spatial direction associated with the direction defined by the intra-prediction modes (see 2. 4x4 luma prediction modes and fig. 2-2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Richards with Chien in order to minimize the residual between a prediction block and the block to be encoded.

Regarding claim 15, see the rejection and analysis for claim 14.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Deleted: /Jessica Roberts/¶
Examiner, Art Unit 2621¶

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA ROBERTS whose telephone number is (571)270-1821. The examiner can normally be reached on 7:30-5:00 EST Monday-Friday, Alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marsha D. Banks-Harold/
Supervisory Patent Examiner, Art
Unit 2621

/Jessica Roberts/

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